

C L A I M S

1. Separator for battery and including a plate shaped structure of inorganic fibers, c h a r a c t e r i z e d in that said separator is impregnated with a dispersion of colloidal inorganic nano particles that have been enriched in the crossing points of the fibers when solvent has been dried so as to form binding agent.
2. Separator according to claim 1, c h a r a c t e r i z e d in that the separator has been heat treated at a temperature between 300 and 700°C in order to obtain a considerably greater rigidity.
3. Separator according to claim 1 or 2, c h a r a c t e r i z e d in that the inorganic fibers comprise material of any of the group: glass fiber, mineral fiber, metal fiber.
4. Separator according to claim 1, 2 or 3, c h a r a c t e r i z e d in that the binding agent includes any of the group:  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{Al}(\text{OH})_3$ ,  $\text{TiO}_2$ .
5. Separator according to any of the previous claims, c h a r a c t e r i z e d in that the binding agent comprises between about 20% and 60% of the total separator weight.
6. Separator according to claim 5, c h a r a c t e r i z e d in that the binding agent comprised between about 25 and 45% of the total separator weight.
7. Battery with positive and negative electrodes, separators and electrolyte, c h a r a c t e r i z e d in that it

includes at least one separator according to any of the claims  
1 - 6.

8. Battery according to claim 7, c h a r a c t e r i z e d  
in that it is mounted with a pressure at its electrodes of at  
5 least 100 kPa, preferably 150 - 250 kPa.

9. Battery according to claim 7 or 8,  
c h a r a c t e r i z e d in that binding agent has been  
supplied to the separator in such an amount that it is  
compressible to about 80% of its thickness at an outside  
10 applied pressure of between 80 and 250 kPa.

10. Battery according to claim 7, 8 or 9 in bipolar form,  
c h a r a c t e r i z e d in that a pressure relieving grid  
is positioned in each negative electrode.

11. Battery according to any of the claims 7 - 10,  
15 c h a r a c t e r i z e d in that it is comprised of a lead  
battery with sulphuric acid electrolyte.

12. Method of producing a separator for a battery, wherein a  
disk-shaped structure comprising inorganic fibres is used,  
c h a r a c t e r i z e d in that said separator is  
20 impregnated with a dispersion of colloidal inorganic nano  
particles which are enriched in the crossing points of the  
fibres when the solvents is dry so as to form binding agent.

13. Method according to claim 12, c h a r a c t e r i z e d  
in that drying of solvent is obtained through drying at raised  
25 temperature.

14. Method according to claim 12 or 13,  
c h a r a c t e r i z e d in that the separator after drying  
the solvent is heat treated at a temperature between 300 and

700°C in order to obtain a considerably greater rigidity of the bond in said crossing points.

15. Method according to claim 12, 13 or 14,  
c h a r a c t e r i z e d in that the inorganic fibres  
5 including material from any of the group: glass fibres,  
mineral fibres, metal fibres are used.

16. Method according to any of claims 12 - 15,  
c h a r a c t e r i z e d in that binding agent from the  
group:  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{Al}(\text{OH})_3$ ,  $\text{TiO}_2$  is used.

10 17. Method according to any of claims 12 - 16,  
c h a r a c t e r i z e d in that the binding agent is  
brought to comprise between about 20 and 60% of the total  
separator weight.

15 18. Method according to any of the claims 12 - 17,  
c h a r a c t e r i z e d in that the binding agent is  
brought to comprise between about 25 and 45% of the total  
separator weight.